

Title:

MRI Features: Mimics in the Differential

Name:

Fiona Costello

Professor

Departments of Clinical Neurosciences and Surgery

University of Calgary

Disclosures

- Dr. Costello has received advisory board honoraria or speaker fees from Amgen and MedEdicus

Learning Objectives

1. To review MRI features of MS
2. To highlight MRI features of MOGAD and NMOSD
3. To identify MRI features of disorders (sarcoidosis, neoplasms, leukodystrophies) that may mimic primary CNS inflammatory conditions

Key Message

- To render accurate diagnoses of MS, NMOSD, MOGAD means excluding other diagnostic considerations that may mimic the radiological features of these conditions

References

1. Solomon AJ, Arrambide G, Brownlee WJ, Flanagan EP, Amato MP, Amezcua L, Banwell BL, Barkhof F, Corboy JR, Correale J, Fujihara K, Graves J, Harnegie MP, Hemmer B, Lechner-Scott J, Marrie RA, Newsome SD, Rocca MA, Royal W 3rd, Waubant EL, Yamout B, Cohen JA. Differential diagnosis of suspected multiple sclerosis: an updated consensus approach. *Lancet Neurol*. 2023 Aug;22(8):750-768. doi: 10.1016/S1474-4422(23)00148-5. PMID: 37479377.
2. Costello F. Neuromyelitis Optica Spectrum Disorders. *Continuum (Minneap Minn)*. 2022 Aug 1;28(4):1131-1170. doi: 10.1212/CON.0000000000001168. Erratum in: *Continuum (Minneap Minn)*. 2022 Dec 1;28(6):1859. doi: 10.1212/CON.0000000000001271. PMID: 35938660.
3. Al-Ani A, Chen JJ, Costello F. Myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD): current understanding and challenges. *J Neurol*. 2023 Aug;270(8):4132-4150. doi: 10.1007/s00415-023-11737-8. Epub 2023 May 8. PMID: 37154894; PMCID: PMC10165591.
4. Cacciaguerra L, Sechi E, Rocca MA, Filippi M, Pittock SJ, Flanagan EP. Neuroimaging features in inflammatory myelopathies: A review. *Front Neurol*. 2022 Oct 18;13:993645. doi: 10.3389/fneur.2022.993645. PMID: 36330423; PMCID: PMC9623025.
5. Banwell B, Bennett JL, Marignier R, Kim HJ, Brilot F, Flanagan EP, Ramanathan S, Waters P, Tenembaum S, Graves JS, Chitnis T, Brandt AU, Hemingway C, Neuteboom R, Pandit L, Reindl M, Saiz A, Sato DK, Rostasy K, Paul F, Pittock SJ, Fujihara K, Palace J. Diagnosis of myelin oligodendrocyte glycoprotein antibody-associated disease: International MOGAD Panel proposed criteria. *Lancet Neurol*. 2023 Mar;22(3):268-282. doi: 10.1016/S1474-4422(22)00431-8. Epub 2023 Jan 24. PMID: 36706773.
6. Wingerchuk DM, Banwell B, Bennett JL, Cabre P, Carroll W, Chitnis T, de Seze J, Fujihara K, Greenberg B, Jacob A, Jarius S, Lana-Peixoto M, Levy M, Simon JH, Tenembaum S, Traboulsee AL, Waters P, Wellik KE, Weinshenker BG; International Panel for NMO Diagnosis. International consensus diagnostic criteria for neuromyelitis optica spectrum disorders. *Neurology*. 2015 Jul 14;85(2):177-89. doi: 10.1212/WNL.0000000000001729. Epub 2015 Jun 19. PMID: 26092914; PMCID: PMC4515040.